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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/695,212 | 10/27/2003 | Raymond H. Thomas | H0004412US | 4510 |

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| EXAMINER | |
|---|---|
| HARDEE, JOHN R | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1751 | |

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/695,212 | THOMAS ET AL. | |
| | Examiner | Art Unit | |
| | John R. Hardee | 1751 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-42 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-42 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02202004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

1. Two of the US references appear to have been cited incorrectly, as the cited inventors do not appear under the cited patent numbers, and the references are not germane to refrigeration. They have been lined out on the IDS.

### *Election/Restrictions*

2. Applicant's election with traverse of Group IA in the reply filed on January 28, 2005 is acknowledged. Applicant argues that, based on *In re Weber*, the examiner is not allowing the applicant to claim his invention as he sees fit. This is not persuasive because the holding in *Weber* is that the examiner cannot *reject* claims out of hand for being "overly broad". The examiner has not made any such rejection. It is worth noting that the *Weber* court declined to comment on the validity of a restriction made in the same case, because restrictions are not in the purview of the courts.

Applicant further argues that the restriction is improper because it is not based on groupings of claims. This is not persuasive because there is no reason that restrictions have to be made on such a basis.

Applicant further argues that the restriction is improper because all of the groups fall in the same class and subclass. While the inventions do fall into the same class and subclass, the argument is not persuasive because different classification is a sufficient criterion, but not a necessary criterion for restriction. The restriction has been made on the basis of recognized divergent subject matter. If applicant believes that the various

compounds do not represent divergent subject matter, and if applicant is willing to admit *on the record* that any of the compounds would be obvious over a disclosure of any of the others, the examiner would happily reconsider the restriction requirement.

The requirement is still deemed proper and is therefore made FINAL.

3. Applicant's election without traverse of the species 1,3,3,3-tetrafluoroethylene is noted with appreciation. The election requirement is made FINAL.

4. While no claims were withdrawn from consideration as being drawn to non-elected inventions, the claims were searched and examined only to the extent that they read on the elected invention and the elected species.

### *Claim Objections*

5. Claims 3 and 4 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The examiner suggests that these claims should depend from claim 1.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 19-24 and 32-35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 4-110388. See the attached English language abstract. The reference discloses that 1,3,3,3-tetrafluoroethylene is a useful refrigerant for cooling and in heat pumps. In the middle passage of col. 7, it is disclosed that it can be mixed with refrigerants such as R22, R32, R124, R125, R134a, R142b, R143a and R152, and it is soluble in refrigeration lubricants. In cols. 11-12, its use in a heat pump with cooling and evaporation at 5 degrees C is disclosed. Under these circumstances, compression and cooling of the surrounding air is clearly taking place, as is heating of the exhaust air.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-14 and 16-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-110388 in view of Brown, US 5,370,812. The JP reference is summarized above. Use of specific lubricants is not disclosed. Brown teaches lubricant compositions which are useful with hydrofluorocarbon refrigerants (abstract). Suitable lubricants include polyalkylene glycols, polyalkylene glycol esters and polyalkylene glycol ethers as depicted at col. 2, lines 52+. One or both terminal groups may be alkyl or hydroxyl, and the terminal group may be an ester, thereby comprising a heteroatom. The polyalkylene glycol most preferably forms 90-99% by weight of the lubricant, with the rest being a hydrocarbon lubricant (col. 3, lines 35+). It would have been obvious at the time that the invention was made to use the polyalkylene glycol-hydrocarbon lubricants of Brown with 1,3,3,3-tetrafluoroethylene refrigerant as disclosed in the JP, because the JP teaches that 1,3,3,3-tetrafluoroethylene is miscible with refrigeration lubricants, and Brown teaches polyalkylene glycol-hydrocarbon lubricants that are useful with hydrofluorocarbon refrigerants. Discovery of the lubrication-effective amount of a known lubricant with a known refrigerant amounts to routine optimization. The

miscibility is disclosed in the prior art with sufficient specificity to give a high expectation of success.

12. Claims 1-15 and 17-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-110388 in view of Thomas et al., US 5,254,280. The JP reference is summarized above. Use of specific lubricants is not disclosed. Thomas discloses refrigerant compositions comprising a hydrofluorocarbon, a polyalkylene glycol lubricant comprising a fluorinated head group and a hydrocarbon lubricant (col. 7, lines 47+). The head groups may also be alkyl or hydroxyl. It would have been obvious at the time that the invention was made to use the polyalkylene glycol-hydrocarbon lubricants of Thomas with 1,3,3,3-tetrafluoroethylene refrigerant as disclosed in the JP, because the JP teaches that 1,3,3,3-tetrafluoroethylene is miscible with refrigeration lubricants, and Thomas teaches polyalkylene glycol-hydrocarbon lubricants that are useful with hydrofluorocarbon refrigerants. Discovery of the lubrication-effective amount of a known lubricant with a known refrigerant amounts to routine optimization. The miscibility is disclosed in the prior art with sufficient specificity to give a high expectation of success.

13. Any prior art made of record and not relied upon is of interest and is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, Dr. John R. Hardee, whose telephone number is (571) 272-1318. The examiner can normally be reached on Monday through

Friday from 8:00 until 4:30. In the event that the examiner is not available, his supervisor, Dr. Yogendra Gupta, may be reached at (571) 272-1316.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John R. Hardee
Primary Examiner
March 29, 2005